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09/990,077	11/21/2001	Hsien-Chung Woo	JNP-0147	1510

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EXAMINER

ABELSON, RONALD B

ART UNIT PAPER NUMBER

2666

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/990,077

Applicant(s)

WOO, HSIEN-CHUNG

Examiner

Ronald Abelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-3, 10 and 12-21 is/are rejected.
- 7) ☒ Claim(s) 4-9 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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***Claim Objections***

1. Claim 21 is objected to because of the following informalities: On line 2, "plans" must be changed to "planes". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 rejected under 35 U.S.C. 102(b) as being anticipated by Jantzen (WO 98/59464).

***Note, the examiner has relied on the English translation provided in this office action.***

Regarding claim 1, Jantzen teaches an apparatus for forwarding packets (fig. 1 box 3, fig. 2 box 31, 32, pg. 7 lines 7-10).

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Jantzen teaches a plurality of inputs configured to receive respective incoming streams of data packets (fig. 2 box 311, pg. 7 lines 10-18).

Jantzen teaches a plurality of outputs (fig. 2 box 321) configured to transmit respective outgoing streams of data (pg. 8 line 36 - pg. 9 line 2).

Jantzen teaches packet forwarding logic configured to form outgoing streams of data from the data packets contained in the incoming streams (fig. 2 box 311, 312, synchronization, filtering serial/parallel conversion, pg. 7 lines 13-18).

Jantzen teaches redundancy logic configured to transmit a first outgoing stream of data packets formed by the packet forwarding logic to a first output and a second output (fig. 2 box 321, data stream transmitted to all bus lines 11 and 12, pg. 8 line 36 - pg. 9 line 2) and further configured to discard data packets contained in a selected incoming stream from one of the first input and a second input before the data packets contained in the selected incoming stream are included in any outgoing data streams (fig. 2 box 313, pg. 8 lines 32-34). Note, the examiner corresponds the applicant's discarding data packets contained in a selected incoming stream with the reference outputting a rest state if the evaluation state does not identify a valid data stream.

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Regarding claim 2, wherein the first input (fig. 2 box 311 left hand side and the first output (fig. 2 box 321 left hand side) are connected to a first service module / redundancy means for processing data packets contained in the first outgoing stream (fig. 1 box 3: pg. 6 lines 18-21). As shown in fig. 1, the inputs and outputs of both redundancy means for group 21 are connected to the inputs and outputs of both redundancy means for group 22.

Regarding claim 3, wherein the second input (fig. 2 box 311 right hand side and the second output (fig. 2 box 321 right hand side) are connected to a second service module / redundancy means for processing data packets contained in the first outgoing stream (fig. 1 box 3: pg. 6 lines 18-21). As shown in fig. 1, the inputs and outputs of both redundancy means for group 21 are connected to the inputs and outputs of both redundancy means for group 22.

3. Claims 16 and 17 rejected under 35 U.S.C. 102(b) as being anticipated by Magee (US 6,002,687).

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Regarding claim 16, Magee teaches an interface module usable in a system for forwarding packets (fig. 8, col. 19 line 66 - col. 10 line 9).

Magee teaches an ingress port for receiving an incoming stream of data packets (fig. 8 box 10-1: see inputs, col. 19 lines 57-59).

Magee teaches a transfer unit configured to transmit the data packets contained in the received incoming stream (program encoders form a first stage, col. 19 lines 57-59) to each of a plurality of forwarding planes (fig. 8 boxes 100-1, 100-2) connectable to the interface module (col. 19 line 66 - col. 10 line 9).

Magee teaches an egress port for transmitting an outgoing stream of data packets (fig. 8 output of box 680: col. 20 lines 8-9).

Magee teaches a switchover unit configured to select one of the plurality of forwarding planes connectable to the interface module (col. 20 lines 36-42) and to form the outgoing stream of data packets from data packets received from the selected forwarding plane (fig. 8 box 680, col. 20 lines 8-9, 40-42).

Regarding claim 17, the switchover unit selects one of the plurality of forwarding planes in response to receipt of a

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signal indicating the status of one or more of the plurality of forwarding planes (col. 20 lines 36-42).

4. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Ishibashi (US 5,663,949).

Regarding claim 18, Ishibashi teaches a system for forwarding packets / ATM cells (fig. 27, col. 1 lines 34-42).

Ishibashi teaches first and second forwarding planes (fig. 27 boxes 4), each configured to receive data packets from a plurality of interface modules (fig. 4 boxes 5) and transmit received data packets to a plurality of interface modules (fig. 4 boxes 4, col. 1 lines 23-42). Note, ATM cells are received from and transmitted to 'Other ATM Switch'.

Ishibashi teaches a first interface module (fig. 4 box 5) coupled to the first and second forwarding planes (fig. 27 boxes 4), the first interface module receiving data packets contained in an incoming stream at an ingress port (fig. 27: see incoming cells from "Other ATM Switch") and transmitting the data packets to the first forwarding plane and the second forwarding plane (fig. 27 boxes 4: see connection from box 5 to boxes 4), the first interface module further receiving data packets from each of the first and second forwarding planes (fig. 27 boxes 4: see connection from boxes 4 to box 5) and transmitting at an egress

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port data packets from a selected one of the first and second forwarding planes (fig. 5: see transmission from box 5 along line 130, switching status of active or standby, col. 1 lines 44-52).

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 10 and 12-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Furuichi (US 20020024928).

Regarding claims 10 and 15, Furuichi teaches a method of forwarding data packets (fig. 5).

Furuichi teaches forming a first stream from received data packets (fig. 5 line 401, pg. 3, [0036] data transferred on working line 401).

Furuichi teaches transmitting the first data stream to both a first service module (fig. 5 box 41.1) and second service



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module (fig. 5 box 41.2, pg. 3, [0036] data transferred on both working line 401 and reserved line 402).

Furuichi teaches receiving an indication of whether the first service module has failed (fig. 5 box 41.1, pg. 3, [0037], failure line interface 41.1).

Furuichi teaches if the indication indicates that the first service module has not failed, discarding packets processed by the second service module (fig. 5 box 2, pg. 3 [0036], multiplexer 2 multiplexes cells received from only working line interfaces).

Furuichi teaches if the indication indicates that the first service module has failed, discarding packets processed by the first service module (pg. 3, [0037], cells received from line interface 41.2 are selected).

Regarding claim 12, initially designating the first service module (fig. 5 box 41.1) to be active ([0036]: note the line interface 41.1 is part of the working line 401), and designating the second service module (fig. 5 box 41.2) to be active if the indication indicates that the first service module has failed ([0037], in the event of failure, cells received from the line interface 41.2 are selected).

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Regarding claim 13, if the indication indicates that the first service module has not failed, forming outgoing streams from at least data packets processed by the first service module ([003], normally operating, multiplexer 2 multiplexes cells received from only working line interfaces).

Regarding claim 14, if the indication indicates that the first service module has failed, forming outgoing streams from at least data packets processed by the second service module ([0037], in the event of failure, cells received from the line interface 41.2 are selected).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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8. Claim 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi as applied to claim 18 above, and further in view of Allen (US 6,868,082).

Regarding claim 19, although Ishibashi teaches a routing engine for computing routing information using routing protocols (fig. 27 individual ATM Switch 2), the reference is silent on the routing engine, coupled to each of the first and second forwarding planes.

Allen teaches the routing engine (fig. 10: Switch Fabric 1), coupled to each of the first and second forwarding planes (fig. 10 boxes NP1, NP2, col. 7 line 60 - col. 8 line 2).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Ishibashi by connecting each Fiber Interface Common Card (fig. 27 box 4) to each ATM Switch (fig. 27 box 2) as shown by Allen. The suggestion to perform this modification to permit a switch to duplicate the traffic onto the control processors as opposed to transmitting the traffic onto just one control processor (Allen: col. 7 line 66 - col. 8 line 2). Note, the examiner corresponds the control processors of Allen with the forwarding planes of the applicant. This would benefit the system of Ishibashi since if any Fiber Interface Common Card and ATM Switch were to fail simultaneously, the system would still be able to function.

Regarding claim 20, the first and second forwarding planes forward received data packets for transmission based on address information contained in respective data packets (Ishibashi: VPI, VCI, col. 10 lines 60-64) and route information computed by the routing engine / switch (Ishibashi: fig. 5 box 2, 4, 5). Regarding route information computed by the routing engine / switch, note cells are routed from the switch / routing engine (fig. 27 box 2) to the Fiber Interface Common Card (Ishibashi: fig. 5 box 4) to the Interface Card (Ishibashi: fig. 5 box 5).

Regarding claim 21, the first interface module selects one of the first and second forwarding planes in response to a signal indicating the status of one or more of the forwarding planes (Ishibashi: fig. 28, faults of the line devices detected by the fiber interface common card, col. 2 lines 17-21). Note, in the passage provided, routing from the first interface module may be updated based upon a fault in one of the forwarding planes / Fiber Interface Common Card.

***Allowable Subject Matter***

9. Claims 4-9 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

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independent form including all of the limitations of the base claim and any intervening claims.


### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ronald Abelson  
Examiner  
Art Unit 2666

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